CALS TEST NETWORK

AFCTN Test Report 93-072

AFCTB-ID 93-062

Technical Publication Transfer

Using:

Northrop Corporation's Data

MIL-D-28000A (IGES)
MIL-M-28001A (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

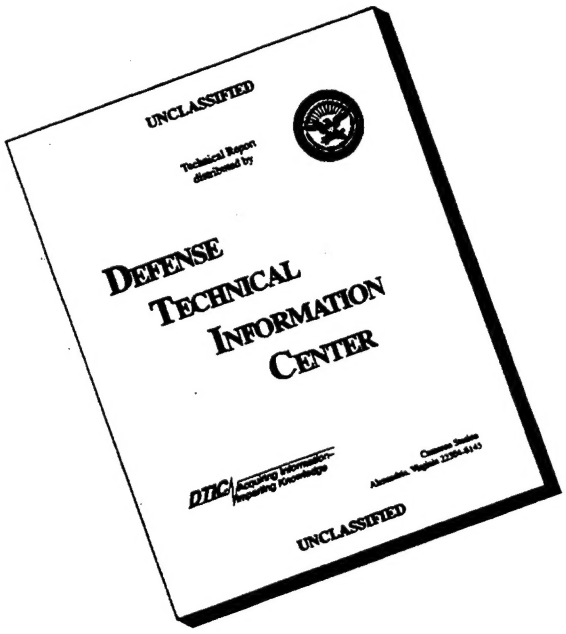
Quick Short Test Report

10 June 1993

Prepared for

Electronic Systems Center

DISCLAIMER NOTICE



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10 June 1993

Prepared By
Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

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Contents

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Northrop Corporation's interpretation and use of the CALS standards in transferring technical publication data. Northrop used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 93-062

Date of Evaluation: 10 June 1993

Evaluator:
George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/ENCP
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator:
John P Kent
Northrop Corporation
B-2 Division, L591/UB
8900 East Washington Blvd
Pico Rivera CA 90660-3765
(310) 948-0624

Data Description:
Technical Manual Test
2 Document Declaration files
2 Document Type Definitions (DTD)
1 Initial Graphics Exchange Specification (IGES) file
2 Text files
1 Raster file
1 Computer Graphics Metafile (CGM) file

Data Source System:

1840

HARDWARE

Unknown

SOFTWARE

Unknown

IGES

HARDWARE
Unknown
SOFTWARE
Unknown

Text/Standard Generalized Markup Language (SGML)

HARDWARE
Unknown
SOFTWARE
Unknown

Raster

HARDWARE
Unknown
SOFTWARE
Unknown

CGM

HARDWARE
Unknown
SOFTWARE
Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)
SUN 3/280
AFCTN *Tapetool v1.2.8 UNIX*
XSoft *CAPS/CALS v40.4*
Texas Instruments (TI) *Tapetool v1.0.1*
PC 486/50
AFCTN *Tapetool v1.2.9 DOS*

MIL-D-28000 (IGES)
Sun SparcStation 2
ArborText *iges2draw*
Carberry *CADLeaf Plus v3.1*
IGES Data Analysis (IDA) *Parser/Verifier v93*
IDA *IGESView v3.05*
PC 486/50
AUTODESK *AutoCAD 386 R12*

MIL-M-28001 (SGML)

PC 486/50

Datalogics *ParserStation v3.36*
Exoterica *XGMLNormalizer v1.2e3.2*
Exoterica *Validator v2.0 EXL*
McAfee & McAdam *Sema Mark-it v2.3*
Public Domain *sgmls*

MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText *g42tiff*
Carberry *CADLeaf Plus v3.1*
AFCTN *validg4*
AFCTN *calstb.475*
IDA *IGESView v3.0*
Island Graphics *IslandPaint v3.0*

PC 486/50

AFCTN *validg4*
IDA *IGESView Windows*
Inset Systems *HiJaak v2.1*
Inset Systems *HiJaak Window v1.0*
Corel *Ventura Publisher*

MIL-D-28003 (CGM)

SUN SparcStation 2

ArborText *cgm2draw*
Island Graphics *IslandDraw v3.0*
Carberry *CADLeaf Plus v3.1*

PC 486/50

Advance Technology Center
(ATC) *MetaView R 1.12*
ATC *MetaCheck R 2.05*
Software Publishing Corporation
(SPC) *Harvard Graphics v3.05*
Inset Systems *HiJaak v2.1*
Inset Systems *HiJaak v1.0 Windows*
Micrografx *Designer v3.1*
Micrografx *Charisma v2.1*
Corel *Ventura Publisher*

Standards Tested:

MIL-STD-1840A
MIL-D-28000A
MIL-M-28001A
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.9* utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's *CAPS read1840A* utility without any reported errors.

The tape was read using TI's *Tapetool v1.0.1*.

The physical tape structure meets the CALS MIL-STD-1840A and ANSI x3.27.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration files. One error was reported in file D002T001. The srcsys record had

an extra space after the colon, which is acceptable and not an error. However, the extra space should have been removed.

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/UB, 8900 E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.
*** NOTE - Correction made in new Document Declaration Header File.

This portion of the tape meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

The tape contained one IGES file. This file was evaluated using IDA's *Parser/Verifier* set for CALS Class I. No CALS errors were reported during this procedure.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *iges2draw* utility with no reported errors. The resulting file was read into Island Graphics' *IslandDraw* and displayed. When viewed on the screen only part of the image was displayed on the left side of the screen. Using a switch on the *iges2draw* software, the resulting file could be completely displayed. The error was traced to a left base line of -3 which the basic *iges2draw* utility could not handle.

The file was read using AUTODESK's *AutoCAD R12* with translator version 5.1.

The file was converted using Cadkey's *ig2c* utility. The resulting file was read into *Cadkey* and displayed.

The file was read into Carberry's *CADLeaf* software without a reported error. However, only part of the image was displayed. This is the result of the -3 value for the left start point of the image file.

The file was read using IDA's *IGESView* and *IGESView for Windows*.

The IGES file meets the CALS MIL-D-28000A specification.

5. SGML Analysis

The tape contained two DTD and two Text files. Both sets of files were evaluated using available tools in the AFCTB.

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

5.1 File Set One

This file set was a unique set with many tokens in both the DTD and sample Text file.

The Text and DTD files from the tape were evaluated using Datalogics' *ParseStation*. No errors were reported.

The Text and DTD files from this document were evaluated using Exoterica's *Validator exl* parser with no reported errors.

The Text and DTD files from this document were tested using Exoterica's *XGMLNormalizer* parser with no reported errors.

The Text and DTD files from the tape were evaluated using McAfee & McAdam's *Sema Mark-it* parser with no reported errors.

The Text and DTD files from the tape were evaluated using the Public Domain *sgmls* parser with no reported errors.

The first document set meets the CALS MIL-M-28001A specification.

5.2 File Set Two

The Text and DTD files from the tape were evaluated using Datalogics' *ParseStation* with no reported errors.

The Text and DTD files from this document were evaluated using Exoterica's *Validator exl* parser with no reported errors.

The Text and DTD files from this document were tested using Exoterica's *XGMLNormalizer* parser with no reported errors.

The Text and DTD files from the tape were evaluated using McAfee & McAdam's *Sema Mark-it* parser with no reported errors.

The Text and DTD files from the tape were evaluated using the Public Domain *sgmls* parser with no reported errors.

The second file set meets the CALS MIL-M-28001A specification.

6. Raster Analysis

The tape contained one Raster file. This File was evaluated using the AFCTN *validg4* utility. This program reported that the file meets the CALS MIL-R-28002A specifications.

The file was read into the AFCTN *calstb.475* viewing utility. The images appeared to be scanned in at a slight angle. Some orphan pixels were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *g42tiff* utility without a reported error. The resulting file was read into Island Graphics' *IslandPaint* and displayed.

The Raster file was read into Carberry's *CADLeaf* software without a reported error and was displayed.

The file was read into IDA's *IGESView* and *IGESView for Windows* without a reported error.

The file was read into Inset Systems' *HiJaak for Windows* without a reported error.

The file was converted using Inset Systems' *HiJaak for DOS* into an IMG format without a reported error. The resulting file was read into Corel's *Ventura Publisher* and displayed.

The Raster file was converted using Rosetta Technologies' *Prepare* without a reported error. The resulting file was read into *Preview* and displayed.

The Raster file meets the CALS MIL-R-28002A specification.

7. CGM Analysis

The tape contained one CGM files. The file was evaluated using ATC's *MetaCheck* with CALS options. This utility reported that the file meets the CALS MIL-D-28003 specification.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor and indication

of CALS capability. All operations were performed using the default settings.

The CGM file was converted using ArborText's *cgm2draw* utility without a reported error. The resulting file was read into Island Graphics' *IslandDraw*, displayed and printed. It was noted that some text overflow occurred in the text in the bottom of the entity boxes.

The file was viewed using ATC's *MetaView* software. This program displayed the image with font errors.

The file was read into Carberry's *CADLeaf* software and displayed. No errors were noted.

The file was read into Inset Systems' *HiJaak for Windows* with a reported error. The file would not load and the program aborted.

The file was imported directly into Island Graphics' *IslandDraw* without a reported error. Text overflow in the restricted text entity was noted. Also noted was errors in the elliptical arc, both open and closed.

The file was imported into the Micrografx *Designer* without a reported error. However, nothing was displayed on the screen. When the file was imported into *Charisma*, an error was displayed indicating that the complete file could not be loaded.

According to Michael Harrison of Micrografx, "Micrografx is aware of the problems associated with reading these files and is working on a solution to be implemented in a future release of our products."

The file was imported into SPC's *Harvard Graphics 3.05* with reported errors. The resulting file was not usable with line and circles spread around image.

An attempt to imported into Corel's *Ventura Publisher* resulted in an error message indicating that the file was not a valid CGM file.

The CGM file is reported as meeting the CALS MIL-D-28003 specification.

8. Conclusions and Recommendations

The tape from Northrop Corporation had no reported errors during the evaluation of the physical structure. The tape meets the CALS MIL-STD-1840A requirements.

The IGES file meets the CLAS MIL-D-28000A Class I specification.

The SGML files meet the CALS MIL-M-28001A specification.

The Raster file meets the CALS MIL-R-28002A specification.

The CGM file meets the CALS MIL-D-28003 specification.

The tape submitted by Northrop meets the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

```
CALS Test Network Catalog Evaluation - Version 1.2; Release 9 (0)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Thu Jun 10 13:55:03 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u129/Set015

                                                                    Page: 1

                                                Record
                                                Format/     Block      Selected/
File Name                File Type              Length  Length/Total  Extracted
-------------------------------------------------------------------------------
D001                     Document Declaration   D/00260 02048/000001  Extracted
D002                     Document Declaration   D/00260 02048/000001  Extracted
D001T001                 Text                   D/00260 02048/000001  Extracted
D001G002                 DTD                    D/00260 02048/000003  Extracted
D001H003                 Output Specification   D/00260 02048/000016  Extracted
D002T001                 Text                   D/00260 02048/000002  Extracted
D002C002                 CGM                    F/00080 00800/000006  Extracted
D002R003                 Raster                 F/00128 02048/000017  Extracted
D002Q004                 IGES                   F/00080 02000/000012  Extracted
D002G005                 DTD                    D/00260 02048/000010  Extracted
D002H006                 Output Specification   D/00260 02048/000061  Extracted

Catalog Process terminated normally.
```

9.2 Tape Evaluation Log

```
CALS Test Network Tape Evaluation - Version 1.2; Release 9 (0)
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Thu Jun 10 13:54:48 1993
ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ITDS01                CONTROLLER                                        4

  Label Identifier: VOL1
  Volume Identifier: ITDS01
  Volume Accessibility:
  Owner Identifier:
  Label Standard Version: 4

HDR1D001             ITDS0100010001000100 93158 93158 000000  CONTROLLER

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: ITDS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date:  93158
  Expiration Date:  93158
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:   CONTROLLER

                    <<<<< PART OF LOG REMOVED HERE >>>>>

############ End of Volume ITDS01 ##############
############ End Of Tape File Set ##############

Deallocating /dev/rmt0...

Tape Import Process terminated normally.
```

9.3 Tape File Set Validation Log

```
CALS Test Network File Set Evaluation - Version 1.2; Release 9 (O)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Thu Jun 10 13:55:03 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set015

Found file: D001

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/UB
E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624
srcdocid: STPRO25.2.4
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930607
dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT, Techne
4027 Col. Glenn Highway, Dayton, OH 45431-1601
dstdocid: STPRO25.2.4
dstrelid: NONE
dtetrn: 19930607
dlvacc: NONE
filcnt: T1, H1, G1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: DIRECTIVE
docttl: Test of error reports

                    <<<<< PART OF LOG REMOVED HERE >>>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

Found file: D002
```

```
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...


srcsys:  John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/U
E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624
*** ERROR (MIL-STD-1840A; 5.1.1.2) - Value contains leading spaces.
*** NOTE - Correction made in new Document Declaration Header File.
srcdocid: STPRO25.2.5
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930607
dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT, Techne
4027 Col. Glenn Highway, Dayton, OH 45431-1601
dstdocid: STPRO25.2.5
dstrelid: NONE
dtetrn: 19930607
dlvacc: NONE
filcnt: T1, H1, G1, C1, Q1, R1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: DIRECTIVE
docttl: Test of local directives

1 error(s), 0 warning(s), and 1 note(s) were encountered
in Document Declaration File D002.

                    <<<<< PART OF LOG REMOVED HERE >>>>>

Saving Output Specification Header File: D002H006_HDR
Saving Output Specification Data File: D002H006_OS

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

A total of 1 error(s), 0 warning(s), and 1 note(s) were
encountered in Document D002.

A grand total of 1 error(s), 0 warning(s), and 1 note(s) were
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.
```

10. Appendix B - Detailed IGES Analysis

10.1 File D002Q004

10.1.1 Parser/Verifier Log

```
************************************
*****  IGES PARSER/VERIFIER   *****
*****       MARCH 1993        *****
*****   IGES Data Analysis    *****
*****     (708) 344-1815      *****
************************************

Input file is /novell/9362/q004.igs

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 10, 1993  3:39 PM

************************************
*****    CHECK FILE SYNTAX    *****
************************************

   Section        Records

   Start              7
   Global             3
   Directory         82  (     41 Entities)
   Parameter        192
   Terminate          1

NITPICK 2489: Excess precision in real constant (3.57988857) for XS of D      3.
NITPICK 2489: Excess precision in real constant (3.8421068) for YS of D      3.
NITPICK 2489: Excess precision in real constant (-1.51611172) for Data.Pts[1].X
              of D      7.
NITPICK 2489: Excess precision in real constant (1.79096268) for Data.Pts[1].Y
              of D      7.
NITPICK 2489: Excess precision in real constant (-1.50860761) for Data.Pts[2].X
              of D      7.
NITPICK 2489: Excess precision in real constant (1.83739446) for Data.Pts[2].Y
              of D      7.
NITPICK 2489: Excess precision in real constant (-1.48984741) for Data.Pts[3].X
              of D      7.
NITPICK 2489: Excess precision in real constant (1.82801424) for Data.Pts[3].Y
```

```
              of D      7.
NITPICK 2489: Excess precision in real constant (-1.46029996) for Data.Pts[4].X
              of D      7.
NITPICK 2489: Excess precision in real constant (1.78345858) for Data.Pts[4].Y
              of D      7.
NITPICK 2489: Messages regarding excess precision suppressed.

 ***********************************
 *****  SUMMARY AND STATISTICS  ****
 ***********************************

 *** File and Product Name Information ***

    File name from sender     = 'Q004.iges'
    File creation Date.Time   = '930607.135403'
    Model change Date.Time    = ''
    Author                    = 'tom'
    Department                = 'GRAPHICS'
    Product name from sender  = 'Q004.iges'
    Destination product name  = 'Q004.iges'

 *** Parameter Delimiters ***

    Delimiter  = ','
    Terminator = ';'

 *** Originating System Data ***

    System ID              = 'ITDS CONVERTER: GEF_IGES'
    Preprocessor version   = '1.0'
    Specification version  = 6 (IGES 4.0)

 *** Precision levels ***
    Integer bits =    32
    Floating point  -  Exponent =    38  Mantissa =     6
    Double precision - Exponent =   308  Mantissa =    15

 *** Global Model Data ***

    Model scale             =  1.0000E+00
    Unit flag               =  1
    Units                   =  'IN'
    Line weights            =  3
    Maximum line thickness  =  1.000000E-02
    Minimum line thickness  =  3.333333E-03
    Granularity             =  1.000000E-03
    Maximum coordinate      =  2.954101E+00
```

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	41
	Blanked	0
Independence:	Independent	39
	Physically Subordinate	0
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	39
	Annotation	2
	Definition	0
	Other	0
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	41
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
106	11	0	24	Copious data - Piecewise planar, linear string(2D path)
106	63	0	8	Simple closed planar curve
110	0	0	6	Line
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	41

*** Labeling Information ***

```
   0% of the entities are labeled.

   Unlabeled      41


*** Line Fonts Used in Data ***

100   102   104   106   108   110   112   114

 -     -     -     -     -     -     -     -    Undefined
 -     -     -    32     -     6     -     -    Solid
 -     -     -     -     -     -     -     -    Dashed
 -     -     -     -     -     -     -     -    Phantom

                          <<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Line Widths Used in Data ***

    Weight       Count      Width

 Defaulted        31       (0.0033)
      2           10       (0.0067)

*** Colors Used in Data ***

 Defaulted         3
       Red         8
     Green        30

**********************************
*****     ENTITY ANALYSIS     *****
**********************************

*** Entity type: 106

*** Entity type: 110

 --      6 lines averaging 1.362447E-01 units --

*** Entity type: 404

Drawing at D      5 contains 1 view.
Drawing at D      5 contains 0 annotation entities.
WARNING 2492: Undefined line font value (0) specified for D      5.

*** Entity type: 406
```

```
WARNING 2492: Undefined line font value (0) specified for D      3.

 *** Entity type: 410

  Scale of view at D      1 is 1.000000E+00.
Orthographic View entity at D      1 has  0 clipping planes specified.
   XMIN = Not Set       XMAX = Not Set
   YMIN = Not Set       YMAX = Not Set
   ZMIN = Not Set       ZMAX = Not Set

WARNING 2492: Undefined line font value (0) specified for D      1.

 *** Message Summary ***

2038: 3 Invalid Line font values.

 *** Error Summary ***

     0 fatal errors
     0 severe errors
     0 errors
     3 warnings
     0 cautions
   842 nitpicks
     0 notes

 *** End of Analysis of /novell/9362/q004.igs ***
```

10.1.2 Parser Log - AutoCAD R12

```
Title: IGESIN Journal (v5.1 Nov 05 1992)
================================================================================
File: C:\Q004.xli
Date: Thu, Jun 10, 1993
Time: 16:24:30
================================================================================

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N:   117-10075750
Translating from IGES file:        C:\Q004.IGS
            to AutoCAD Drawing:    UNNAMED.dwg

================================================================================

Options obtained from:  default settings

Curves Approximated to Tolerance of           0.01

Surfaces Approximated to Tolerance of         0.01

Text Font/Style mapping:
IGES Text font      Style Name       ACAD Font
         0                SYMBOL0         iges0
         1               STANDARD           txt
         2                  LEROY           txt
         3                FUTURA            txt
         6                COMP80            txt
        12               GOTHICE        gothice
        13               GOTHICI        gothici
        14                ROMANS         romans
        17                ROMANT         romant
        18                ROMAND         romand
        19                   OCR            txt
      1001               SYMBOL1      iges1001
      1002               SYMBOL2      iges1002
      1003               SYMBOL3      iges1003
      2001                 KANJI       bigfont

IGES Linefont/AutoCAD Linetype mapping
IGES Line Font      AutoCAD linetype        Shape file
         0                  BYLAYER
         1                CONTINUOUS
         2                    DASHED              acad.lin
```

```
        3                    PHANTOM              acad.lin
        4                     CENTER              acad.lin
        5                        DOT              acad.lin

================================================================================

Parse phase

================================================================================
Start Section:

CONFORMANCE:
  MIL-D-28000 Amendment1, 20 December 1988
  Technical Illustration Class I Subset

ILLUSTRATION IDENTIFIER:
  Q004.iges


Global Section:

Parameter Delimiter:      ,
Record Delimiter:         ;
Sending Product ID:       Q004.iges
File Name:                Q004.iges
System ID:                ITDS CONVERTER: GEF_IGES
Preprocessor Version:     1.0
Size of Integer:          32
Sgl. Precision Mag:       38
Sgl. Precision Sig:       6
Dbl. Precision Mag:       308
Dbl. Precision Sig:       15
Receiving Product ID:     Q004.iges
Model Space Scale:        1.000000
Unit Flag:                1
Unit String:              IN
# of Line Weights:        3
Maximum Line Width:       0.010000
Creation Date:            06/07/93 13:54:03
Minimum Resolution:       0.001000
Maximum Coordinate:       2.954101
Author:                   tom
Organization:             GRAPHICS
IGES Version Number:      6
Drafting Standard:        0

Entity Summary:
```

Type	Form	Description	Count
106	11	Planar Piecewise Linear Curve	24
106	63	Simple Closed Planar Curve	8
110	0	Line	6
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
		Total	41

Translation phase

```
Drawing Entity (404 Form 0) at DE 5, with
   name = ,
   size = 3.579889, 3.842107,
   units = IN,
was processed in the AutoCAD drawing file:  C:\UNNAMED.dwg

*** Warning (ACAD_NEW_VIEW_VOLUME_GENERATED) ***
( DE: 1 TF: 410:0 )
A new view volume has been generated for the view with:
 XMIN (-3.565349), XMAX (0.844311),
 YMIN (-1.296656), YMAX (3.362281),
 ZMIN (-0.500106), ZMAX (0.500106).
```

IGES Entity Summary

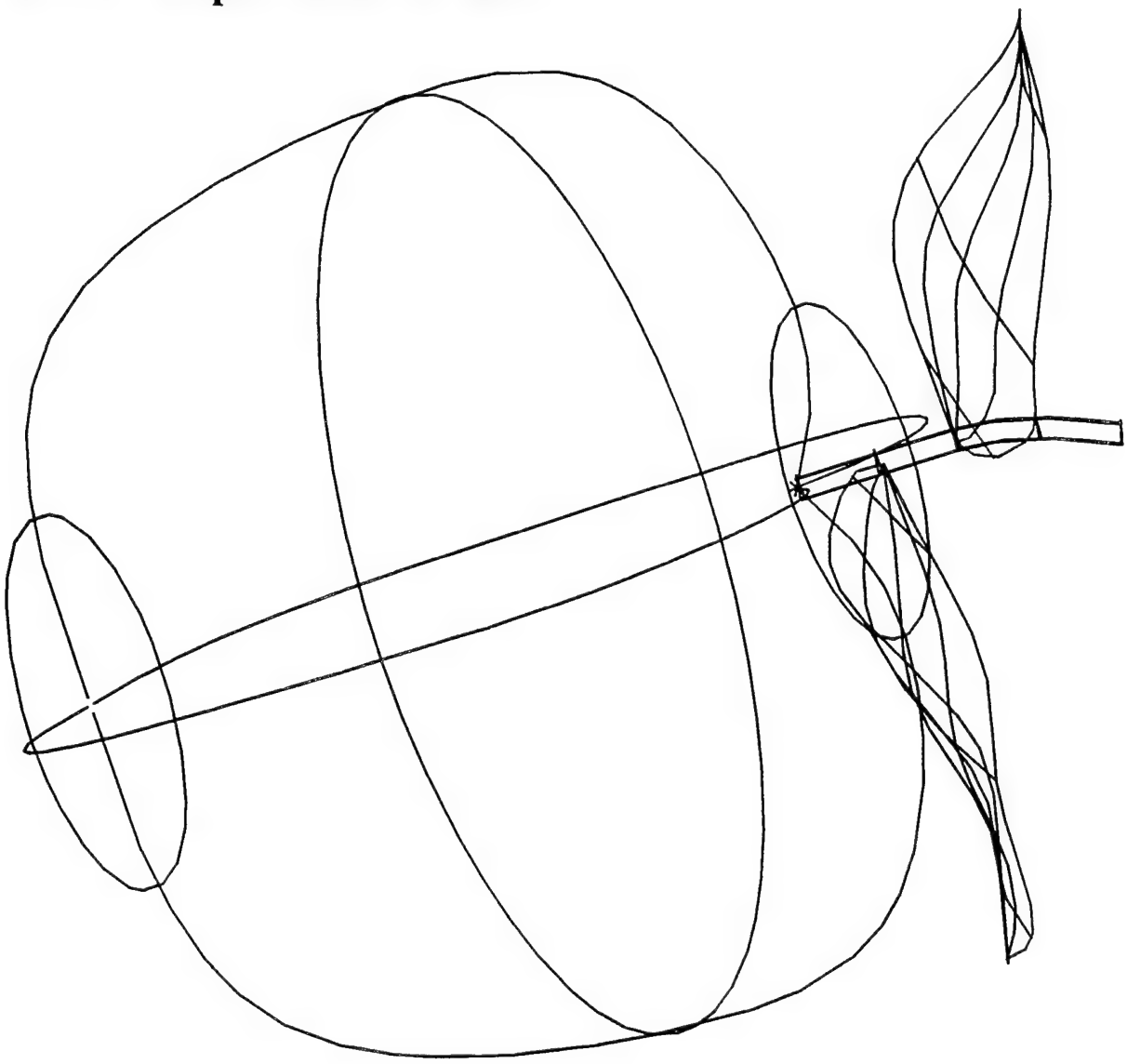
Type	Form	Description	Count	Processed	Errors
106	11	Planar Piecewise Linear Curve	24	24	0
106	63	Simple Closed Planar Curve	8	8	0
110	0	Line	6	6	0
404	0	Drawing (form 0)	1	1	0
406	16	Property (Drawing Size)	1	1	0
410	0	View	1	1	0
Totals			41	41	0

AutoCAD Entity Summary

Entity	Created	Errors
LINE	6	0

```
POLYLINE         32        0

 Totals     =======  ======
                38        0
================================================================================
Error Summary:

The following message was issued 1 time(s)
A new view volume has been generated for the view with:
 XMIN (%lf), XMAX (%lf),
 YMIN (%lf), YMAX (%lf),
 ZMIN (%lf), ZMAX (%lf).

Status:  0
Warning: 1
Error:   0
Fatal:   0

Elapsed Time:

Processor: 00:00:06
Clock:     00:00:06
================================================================================
```

10.1.3 Output AutoCAD R12



11. Appendix C - Detailed SGML Analysis

11.1 Exoterica Validtor 2.0 exl

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning**:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "ENTRY".
   ((((#PCDATA|xref|change|emphasis|hcp|hci|ocp|
        ^^^^^^
-->
<!-- **Warning**:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "NOTICE".
   ((((#PCDATA|xref|change|emphasis|hcp|hci|ocp|
        ^^^^^^
-->
<!-- **Warning** in "9362-2.sgm", line 429:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "RESULT".
   <!ELEMENT result    - o (%text;,faultcode?)>
                                              /\
-->
<!-- **Warning** in "9362-2.sgm", line 629:
   There is no element with an IDREF or IDREFS attribute value equal to a
   specified ID value.
   The unreferenced ID attribute value is "X0".
-->
<!-- 4 warnings reported. -->
```

12. Appendix D - Detailed Raster Analysis

12.1 File D002R003

12.1.1 Output HiJaak for Windows

U.S. ARMY MATERIEL COMMAND
U.S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA

PARTS LIST

PL 10677287

CODE IDENTIFICATION NO. 18876

TITLE OSCILLATOR,VOLTAGE CONTROLLED-COMO-A3A13 | USABLE ON CODE 63343 ECP | DATE 16 NOV 70 | REV - | SHEET | OF

FIND NO.	PART OR IDENTIFICATION NO.	DRAWING OR SPECIFICATION NO.	NOMENCLATURE	QUANTITY	PL	MI	EFFECTIVITY FROM	EFFECTIVITY TO	ZONE	NOTES OR REMARKS
	10181751-207	10181751	RESISTOR							
	10181751-208	10181751	RESISTOR							
	10181751-209	10181751	RESISTOR							
	10181751-210	10181751	RESISTOR							
	10181751-211	10181751	RESISTOR							
	10181751-212	10181751	RESISTOR							
	10181751-213	10181751	RESISTOR							
	10181751-214	10181751	RESISTOR							
	10181751-215	10181751	RESISTOR							
2	10181752-261	10181752	RESISTOR	1						
3	10181752-357	10181752	RESISTOR	1						
4	10181751-147	10181751	RESISTOR	2						
5	10180306-239	10180306	RESISTOR	2						
6	10181751-133	10181751	RESISTOR	1						
7	10181751-166	10181751	RESISTOR	1						
8	10180328-418	10180328	RESISTOR	1						
9	10181752-283	10181752	RESISTOR	1						
10	10181752-298	10181752	RESISTOR	1						
11	10181752-306	10181752	RESISTOR	1						
12	10181752-297	10181752	RESISTOR	1						
13	10181752-289	10181752	RESISTOR	1						
14	10181752-271	10181752	RESISTOR	1						
15	10181752-310	10181752	RESISTOR	1						
16	10181751-55	10181751	RESISTOR	1						1
	10181751-1	10181751	RESISTOR							
	10181751-2	10181751	RESISTOR							
	10181751-3	10181751	RESISTOR							
	10181751-4	10181751	RESISTOR							
	10181751-5	10181751	RESISTOR							
	10181751-6	10181751	RESISTOR							

13. Appendix E - Detailed CGM Analysis

13.1 File D002C002

13.1.1 Parser Log MetaCheck

```
MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 06/10/93     Time:  16:15:52

Metafile Examined    : i:\9362\c002.cgm

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All

======================== Trace Report ========================

Tracing not selected.

============= CGM Conformance Violation Report ==============

No Errors Detected

========== CALS CGM Profile (MIL-D-28003) Report ============

No profile discrepancies detected.

================ Conformance Summary Report =================

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 06/10/93     Time:  16:15:54

Name of CGM under test: i:\9362\c002.cgm
Encoding              : Binary

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All

BEGIN METAFILE string : "C002.cgm"
METAFILE DESCRIPTION  : "NORTHROP B2 ITDS GEF, MIL-D-28003/BASIC-1"
```

Picture 1 starts at octet offset 200; string contains: "Picture 1"

Conformance Summary : This file conforms to the CGM specification.
This file meets the CALS CGM Profile (MIL-D-28003).

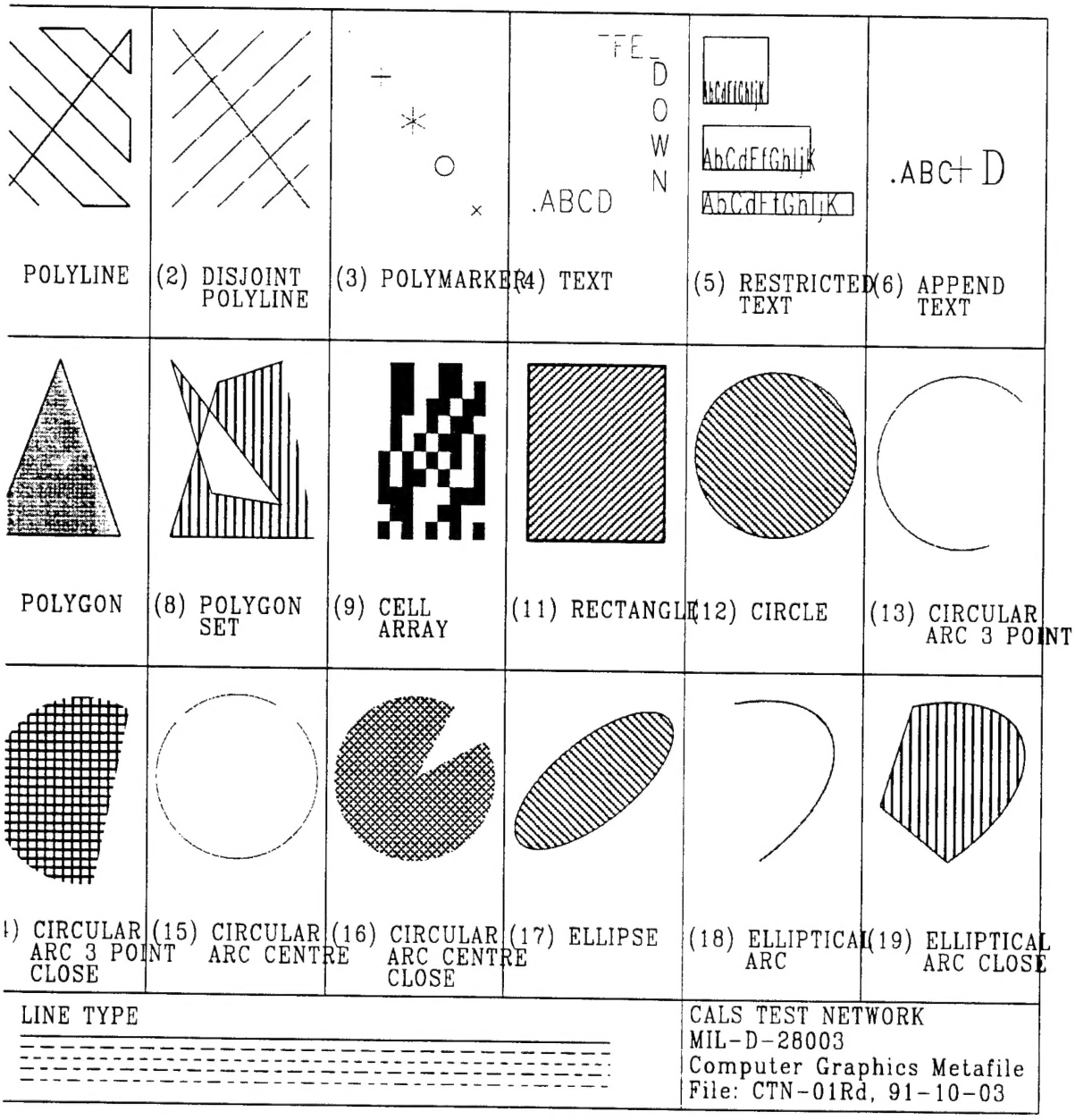
Summary of Testing Performed and Errors Found:

1 Pictures Tested
272 Elements Tested
3978 Octets Tested

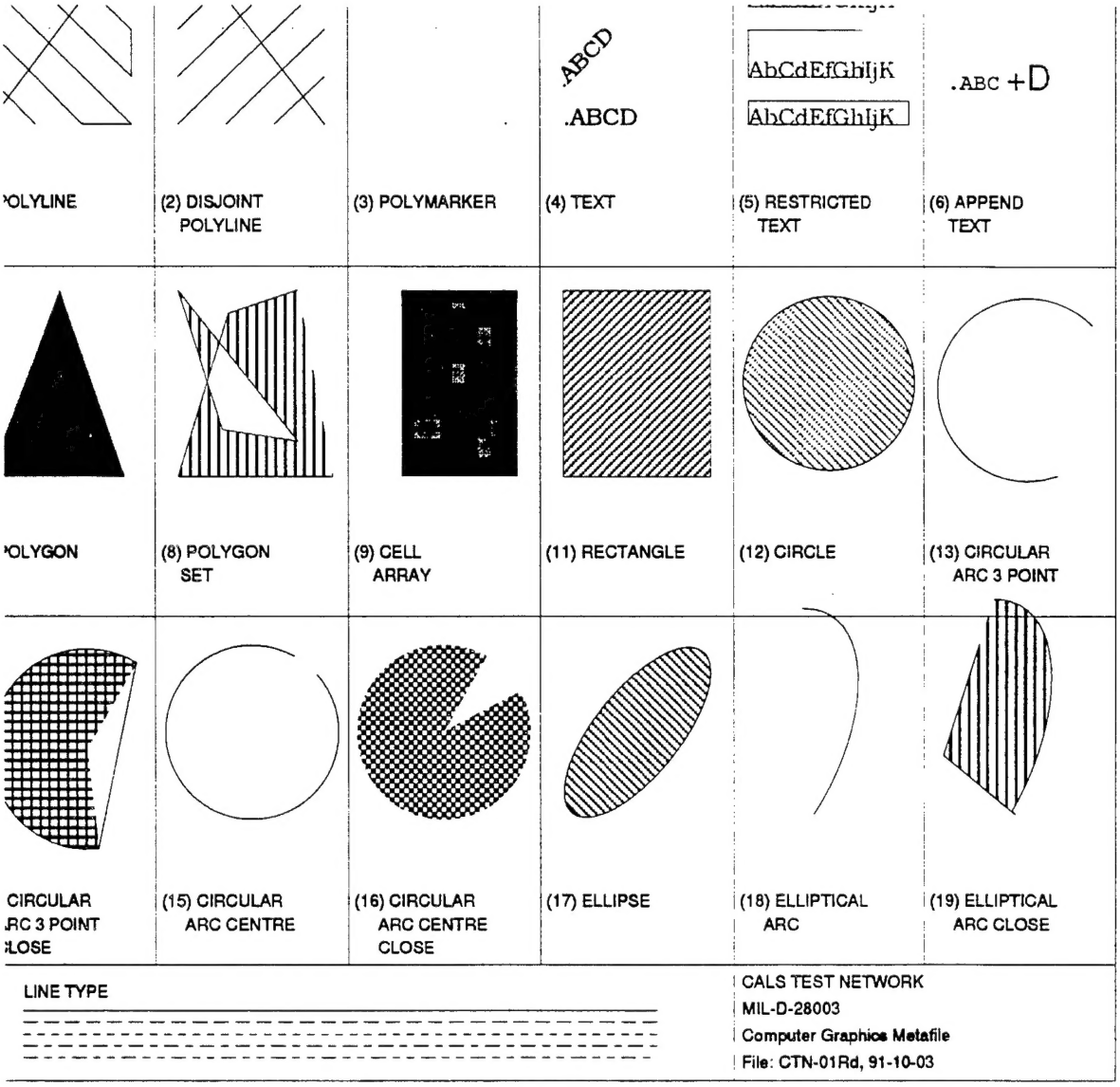
```
==================================
|    No Errors Were Detected     |
==================================
```

========== End of Conformance Report ==========

13.1.2 Output cgm2draw/IslandDraw



13.1.3 Output IslandDraw



13.1.4 Output Harvard Graphics